



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,627	10/26/2001	Isamu Uemasu	100745-7 / Miura 214-KGB	3737

7590 06/03/2003

Norris McLaughlin & Marcus
220 East 42nd Street 30th Floor
New York, NY 10017

EXAMINER

KHARE, DEVESH

ART UNIT

PAPER NUMBER

1623

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,627

Applicant(s)

UEMASU ET AL.

Examiner

Devesh Khare

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-7 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1-5, drawn to a continuous and selective inclusion separation method of a inclusion-complexing agent cyclodextrin(s), classified in class 536, subclass various.

Group II, claims 6 and 7, drawn to an inclusion separator comprising a reaction vessel used in the separation of an inclusion-complexing agent, classified in class 422, subclass 44⁺.

The inventions are distinct, each from the other because:

Inventions I and II are unrelated to one another. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, Group I is drawn to a separation method of an inclusion-complexing agent cyclodextrin(s), which is unrelated to an inclusion separator comprising a reaction vessel used in the separation of an inclusion-complexing agent, of Group II. Therefore, Groups I and II have different issues regarding patentability and enablement and represent patentably distinct subject matter, which merits separate and burdensome searches.

Art Unit: 1623

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

It is noted that the two independent and distinct inventions would indeed impose an undue burden upon the examiner in charge of this application.

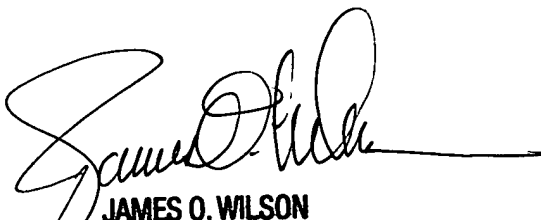
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Devesh Khare whose telephone number is (703)605-

1199. The examiner can normally be reached on Monday to Friday from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, Supervisory Patent Examiner, Art Unit 1623 can be reached at 703-308-4624. The official fax phone numbers for the organization where this application or proceeding is assigned is (703) 308-4556 or 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Devesh Khare, Ph.D.,JD(3Y).
Art Unit 1623
May 23, 2003



JAMES O. WILSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

CLAIMS:

1. A continuous and selective inclusion separation method characterized in that, in a reaction system having at least two liquid-liquid interfaces between an organic phase of raw material containing a compound(s) to be separated and an aqueous phase of an aqueous solution of inclusion-complexing agent and between said aqueous phase and an organic phase(s) of extraction solvent(s), said compound(s) to be separated is entrapped into said aqueous phase through formation of an inclusion complex(es) of said inclusion-complexing agent with said compound(s), while said compound(s) is entrapped into said organic phase(s) of extraction solvent(s) through dissociation of said inclusion complex(es).

2. A continuous and selective inclusion separation method as claimed in claim 1, characterized in that a diaphragm easily permeable to said aqueous solution of inclusion-complexing agent but hardly permeable to oil droplets of said organic phases is provided in said aqueous phase to prevent the two or more organic phases from mixing with each other even with vigorous stirring.

3. A continuous and selective inclusion separation method as claimed in claim 1 or 2, characterized in that said inclusion-complexing agent is a cyclodextrin(s).

4. A continuous and selective inclusion separation method as claimed in claim 3, characterized in that said raw material containing a compound(s) to be separated is a raw material selected from the group consisting of indole-containing mixtures, disubstituted benzene isomer mixtures, trisubstituted benzene isomer mixtures, 2-methylquinoline-containing hydrocarbon oils, 7-methylquinoline-containing mixtures, 2,6-diisopropylnaphthalene-containing mixtures, 2-methylnaphthalene-containing mixtures, 2,6-dimethylnaphthalene-containing mixtures, and optical isomer mixtures of pinene, limonene, menthol, mandelic acid esters, or the like.

5. A continuous and selective inclusion separation method as claimed in any one of claims 1 to 4, characterized in that at least part of a solution as the organic phase containing a compound extracted therein as an object of separation is withdrawn and distilled to concentrate said compound, and the organic solvent separated by distillation is returned back to the reaction system and reused as the extraction solvent.

6. An inclusion separator characterized by comprising a reaction vessel constructed so as to allow an aqueous phase of an aqueous solution of inclusion-complexing agent to form liquid-liquid interfaces with at least two organic phases that are an organic phase of raw material containing a compound(s) to be separated and an organic phase(s) of extraction solvent(s), and stirring means for stirring at least neighborhoods of the respective liquid-liquid interfaces.

7. An inclusion separator as claimed in claim 6, characterized in that a diaphragm easily permeable to said aqueous solution of inclusion-complexing agent but hardly permeable to oil droplets of said organic phases is provided in an inner portion of said reaction vessel wherein said aqueous phase is positioned, whereby said at least two organic phases are prevented from mixing with each other via said aqueous phase.

A3 cont.

in a U-shaped tube. 6 ml of mixed xylene (commercially available product) was placed in one vertical tube of the U-shaped tube while 6 ml of n-hexane was placed in the other vertical tube. Stirring was effected in such a manner that the xylene phase did not mix with the hexane phase. The composition of xylene isomers extracted in the n-hexane phase after 2 hours is shown in Table 5.

Page 19, Example 10, please change as follows:

A4

10009627-102601

Example 10

250 ml of a 10 wt. % aqueous solution of a glucosyl- α -cyclodextrin mixture was placed in an H-shaped tube. 10 ml of mixed xylene (commercially available product) was placed in one vertical tube of the H-shaped tube while 5 ml of dichloromethane was placed in the other vertical tube. Vigorous stirring was effected, provided that the horizontal pipe portion of the H-shaped tube was partitioned with filter paper. The composition of xylene isomers extracted in the dichloromethane phase after 1 hour is shown in Table 10.

IN THE CLAIMS:

Please amend claims 3 and 5 as follows:

A5

3. A continuous and selective inclusion separation method as claimed in claim 1, characterized in that said inclusion-complexing agent is a cyclodextrin(s).

A6

5. A continuous and selective inclusion separation method as claimed in claim 1, characterized in that at least part of a solution as the organic phase containing a

Account

ISAMU UEMASU ET AL
BASED ON PCT/JP00/09073

compound extracted thereinto as an object of separation is withdrawn and distilled to concentrate said compound, and the organic solvent separated by distillation is returned back to the reaction system and reused as the extraction solvent.

REMARKS

It is not believed that the amendments above affects the scope of the claims. The claims have been amended to eliminate multiple dependencies, and place them in better form for U.S. examination.

Support for the specification changes is as follows:

In connection with the changes on page 8, various dictionaries teach that the abbreviation "LPG" refers to liquefied petroleum gas. It is not believed that this amendment effects the scope of claims.

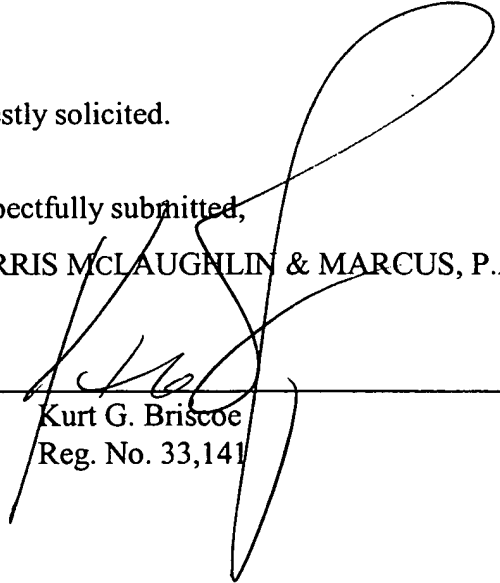
In connection with the change on page 17, see "n-hexane" on page 17, lines 5 and 8.

In connection with the change on page 19, see page 11 lines 27-29 together with Fig. 5 and page 4 line 15 (and page 5 line 9).

Early and favorable action is earnestly solicited.

Respectfully submitted,
NORRIS MCLAUGHLIN & MARCUS, P.A.

By


Kurt G. Briscoe
Reg. No. 33,141

KGB:ja
220 East 42nd Street
30th Floor
New York, New York 10017
Tel.: (212) 808-0700